20-GHz MMIC Receive Module for the ACTS Mobile Terminal*

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A highly integrated 20-GHz receive module is being developed which incorporates 28 MMIC Low Noise Amplifiers and a microstrip 14-way power combiner. Reliability of the array in land-based mobile environments is a key consideration. The advanced module design uses commercially available multichip packaging, complex bias distribution in a multi layer format, and achieves critical spacing for a 2-dimensional planar array antenna. The high performance 14-way power combiner employs a novel modified-Wilkinson design. The module is very densely packaged with 14 microstrip interfaces to the antenna and a single coaxial output connector in a 15.0 cm x 5.0 cm x 0.9 cm space.

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